

BEFORE THE BOARD OF OIL, GAS AND MINING

DEPARTMENT OF NATURAL RESOURCES

THE STATE OF UTAH

IN THE MATTER OF THE PETITION	)	
OF RAYMOND T. DUNCAN FOR	)	
APPROVAL OF A WATERFLOOD	)	
SECONDARY RECOVERY PROJECT	)	FINDINGS OF FACT,
AND SIMULTANEOUS HEARING OF A	)	CONCLUSIONS OF LAW,
CLASS II INJECTION WELL	)	AND ORDER
APPLICATION, IN THE CAVE	)	
CANYON FIELD, SAN JUAN COUNTY,	)	Docket No. 89-005
UTAH	)	Cause No. 217-1

This cause came on regularly for hearing before the Board of Oil, Gas & Mining (the "Board") on Thursday, March 23, 1989; April 27, 1989; and May 25, 1989, in the Board Room of the Division of Oil, Gas and Mining, 3 Triad Center, Suite 301, 355 West North Temple, Salt Lake City, Utah.

The following Board members were present at one or more of the hearings: Gregory P. Williams, Chairman; E. Steele McIntyre, Charles R. Henderson, Judy F. Lever, James M. Carter, Richard B. Larsen, and John M. Garr. Also present representing the Division were Dr. Dianne R. Nielson, Director; Ronald J. Firth, Associate Director Oil and Gas; John R. Baza, Petroleum Engineer; and Barbara W. Roberts, Assistant Attorney General and Counsel to the Division. Participating and representing the Bureau of Land Management (BLM) were Robert A. Henricks

(Chief, Branch of Fluid Minerals, Utah State Office) and Steve Jones (Petroleum Engineer, Moab District Office). Testifying on behalf of Petitioner Raymond T. Duncan were Steve Fallin, Production Manager; Robert Lentz, geologist; Daniel H. Stright, Jr., consulting petroleum engineer with Reservoir Management Services, Inc.; and John L. Moore, independent consulting professional landman. Duncan was represented by Robert G. Pruitt, Jr. of Pruitt, Gushee & Fletcher. Testifying for Respondent and Counter-Petitioner Yates Petroleum Corporation were Dr. David F. Boneau, Engineering Manager; and Steven W. Speer, staff geologist. Yates was represented by Phillip Wm. Lear of Van Cott, Bagley, Cornwall & McCarthy. No other parties appeared or participated in the hearing.

The Board appointed James M. Carter as the hearing examiner for purposes of taking evidence regarding the allocation formula. Mr. Carter conducted hearings on the allocation formula on April 27, 1989, and May 2, 1989, respectively. The same parties and witnesses appeared before the hearing examiner as before the Board.

NOW THEREFORE, The Board, having fully considered the testimony adduced and the exhibits received at the hearings and being fully advised in the premises, now makes and enters its Findings of Fact, Conclusions of Law and Order as follows:

## FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. In accordance with Petitioner's Motion for Expedited Hearing, to which Respondent has concurred, due and regular notice of the time, place, and purpose of the hearing was given to all interested parties in the form and manner and within sufficient time as required by law and the rules of the Board.

2. The Board has jurisdiction over the matters covered by said Petition and Counter-Petition, and over all parties interested therein, and has jurisdiction to make an promulgate the Order hereinafter set forth.

3. Raymond T. Duncan is an individual residing in Denver, Colorado. Mr. Duncan and his various oil and gas companies ("Duncan") own and operate federal leases and wells in the Cave Canyon Field Area.

4. Yates Petroleum Corporation ("Yates") owns and operates federal leases and wells in the Cave Canyon Field Area.

5. The Yates Cave Canyon Federal No. 1-33 Well located in the SW $\frac{1}{2}$ SE $\frac{1}{2}$  of Section 33 is on the geologic structure proposed for waterflood operations and produces from the Upper Ismay formation.

6. The Yates Cave Canyon Federal No. 1-33 Well is within the same porosity system as the Duncan wells proposed for waterflooding, and the structure embraces one continuous reservoir requiring unitization.

7. The Unit boundaries for the proposed Cave Canyon Field Secondary Recovery Unit (the "Unit") area have been stipulated by the parties to embrace the following described lands in San Juan County, Utah:

Township 37 South, Range 24 East, S.L.M.

Section 33:  $SE\frac{1}{4}SW\frac{1}{4}$ ,  $S\frac{1}{2}SE\frac{1}{4}$

Township 38 South, Range 24 East, S.L.M.

Section 3:  $W\frac{1}{2}$ ,  $W\frac{1}{2}SE\frac{1}{4}$

Section 4:  $NE\frac{1}{4}$ ,  $NE\frac{1}{4}NW\frac{1}{4}$ ,  $NE\frac{1}{4}SE\frac{1}{4}$ ,

(containing 760 acres, more or less)

8. The formation to be unitized for secondary recovery operations is the Upper Ismay Zone of the Paradox formation, more particularly described as follows:

The interval as identified in the gamma ray-density log run in the Cave Canyon Federal #3-1 Well located in the  $SW\frac{1}{4}NW\frac{1}{4}$  of Section 3, Township 38 South, Range 24 East, S.L.M., with the top being at a depth of 5,702 feet below the surface of the Kelly Bushing (-360 subsea) and the base being at a depth of 5,882 feet below the surface of the Kelly Bushing (-540 subsea).

9. The hydrocarbon pore volume map prepared by Duncan Exploration Company and offered in evidence as Yates Exhibit 1-B should be used for the purpose of allocating interest in the Unit.

10. The factors for allocating participation in the Unit should be (a) cumulative oil production to date and (b) hydrocarbon pore volume (HCPV), weighted 25%-75%, respectively. The share of Yates cumulative oil production to

date is 2.5%, while Yates' share of hydrocarbon pore volume is 2.56%. Therefore, the share of interest attributable to the Yates leasehold and well in the Unit is  $(2.5\% \times 25\%) + (2.56\% \times 75\%)$  2.545%. The remaining shares of interest, 97.455%, is attributed to the Duncan leasehold and wells.

11. The value of the estimated additional recovery of oil or gas substantially exceeds the additional costs incident to conducting secondary recovery operations.

12. Petitioner's proposed water injection and waterflood project for the Cave Canyon Field is necessary for the purposes of Chapter 6, Title 40, Utah Code Annotated.

13. No voluntary agreement of the type contemplated by section 40-6-7(1) of the Utah Code Annotated, and no plan of development and operation of the pool as a unit as contemplated by section 40-6-7(2) of the Utah Code Annotated exist with respect to secondary recovery operations within the proposed Cave Canyon Field Unit.

14. The secondary recovery will be achieved by water injection and waterflood programs.

15. The proposed Unit Agreement creates a working interest unit to be known as the "Cave Canyon Field Secondary Recovery Unit". The basic landowner's royalty is not unitized and will be paid on a leasehold basis. In all cases the working interest or operating rights in the subject lands and formations will be unitized for secondary recovery operations.

16. In excess of 70% of all owners of working interest (operating rights) are prepared to execute the Unit Agreement.

17. Duncan Exploration Company will be the unit operator for the Unit.

18. The Bureau of Land Management, Branch of Fluid Minerals, has approved the plan of development.

19. Secondary recovery operations contemplated by the Unit Agreement are in the public interest and promote conservation, will increase ultimate recovery, will prevent waste, and will protect the correlative rights of each owner or producer.

20. The proposed Unit Agreement introduced at the hearing as Exhibit "C," together with all attachments, contain all of the provisions required by statute and are acceptable to the Division as modified.

21. The plan of unit development contained in the Waterflood Feasibility Study of the Cave Canyon Field dated March 1, 1989 (the "Study Report"), introduced at the hearing as Exhibit "D" supports the contemplated secondary recovery by injection of water and waterflood procedures and is acceptable to the Division as submitted.

22. Petitioner's Class II UIC published petition received no protests and should be approved as proposed.

## ORDER

After considering all testimony and evidence presented at the hearings, the findings of the hearing examiner, and the comments received from the staff of the Division and the BLM, the Board enters the following Order:

1. The waterflood project and plan of operation proposed by Petitioner, as described in the Study Report is hereby approved by the Board with the changes involving unitization and allocation of interests ordered herein as provided under sections 40-6-7 and 40-6-8 of the Utah Code Annotated.
2. Unitization sought by Counter-Petitioner is hereby granted, as modified by this Order.
3. The lands and formations described in paragraphs 7 and 8 of the Findings of Fact constitute a pool for the operation of a waterflood secondary recovery unit in the Upper Ismay Zone of the Paradox formation, and this Board hereby establishes the same as a pool to be operated as a unit for the continued operation of all wells thereon.
4. The unit hereby established shall be known as the "Cave Canyon Field Secondary Recovery Unit."
5. The Unit Agreement, together with all attachments, is hereby approved as modified.

6. The Unit Agreement shall be binding upon all owners of working interest or operating rights when the owners who are required to pay 70% of the costs of unit operation approve in writing and join in execution of the Unit Agreement and Unit Operating Agreement, as authorized by sections 40-6-7 and 40-6-8 of Utah Code Annotated. All such written approvals must be obtained within six (6) months from the effective date of this order, or this order shall become ineffective and shall be revoked by the Board unless, for good cause shown, the Board extends the time for approval

7. The interest of the owners of the overriding royalty or leasehold burdens other than the basic lessor's royalty shall be committed to the unit upon the joinder of any such owner's interest. The lessor's royalty shall be paid on a leasehold basis, and the interest of any other non-cost bearing owner shall be paid on a leasehold basis if the owner thereof does not voluntarily join the Unit. The lessor's royalty likewise may be committed to the unit upon the lessor's subsequent approval, without hearing and subsequent order of the Board.

8. Any owner of working interest/operating rights who does not voluntarily commit his interest to the Unit shall be a "non-consenting owner" and shall be deemed to have contracted with the unit operator for his proportionate part of the cost of developing and operating the Unit Area, in



accordance with section 40-6-8(3)(e) of the Utah Code Annotated.

9. The allocation formula described in paragraph 10 of the Findings of Fact, which is based upon cumulative oil production and hydrocarbon pore volume (HCPV), is hereby approved.

10. Spacing orders and/or state-wide field or well location and siting rules affecting the subject lands and formation are hereby suspended to the extent said orders or rules are inconsistent with the Unit Agreement for development of the Unit.

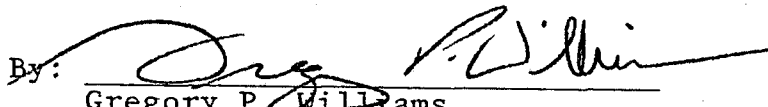
11. This order does not waive jurisdiction of the Board over the Underground Injection Control (UIC) Program with respect to the injection wells contemplated for the Cave Canyon Field Unit Area, and expressly directs Petitioner to comply with all requirements and procedures of the UIC Program.

12. The underground injection well program proposed by Petitioner in connection with said project is approved by the Board in accordance with applicable statutes and regulations.


13. The Board retains continuing jurisdiction over the subject matter and the parties for purposes of considering any amendments or revisions to the plans of operation, the Unit Agreement governing unit operations, and the lands affected by the unit.

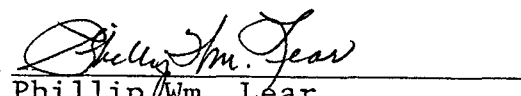
Entered this 23<sup>rd</sup> day of June, 1989, but  
effective May 25, 1989.

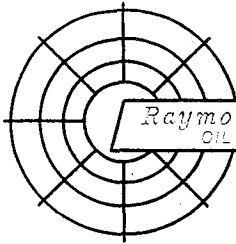
STATE OF UTAH BOARD OF OIL,  
GAS AND MINING

By:   
Gregory P. Williams  
Chairman

Approved as to form:

  
Robert G. Pruitt, Jr.  
Attorney for Petitioner

  
Phillip Wm. Lear  
Attorney for Respondent



Raymond T. Duncan  
OIL PROPERTIES

1777 SOUTH HARRISON STREET, PENTHOUSE ONE  
TELEPHONE (303) 759-3303, DENVER, COLORADO 80202

June 5, 1990

Bureau of Land Management  
P. O. Box 970  
Moab, UT 84532

Re: Cave Canyon No. 3-5  
2550' FEL & 2150' FSL  
NW SE Sec. 3-T38S-R24E  
San Juan County, UT

Gentlemen:

This letter is to inform you that Permitco is authorized to act as Agent and to sign documents on behalf of Raymond T. Duncan when necessary for filing County, State, and Federal permits including Onshore Order No. 1, Right-of-Way applications, etc., for the above captioned well.

It should be understood that Permitco is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production, or compliance with regulations.

Raymond T. Duncan agrees to accept full responsibility for operations conducted in order to drill, complete, and produce the above captioned well.

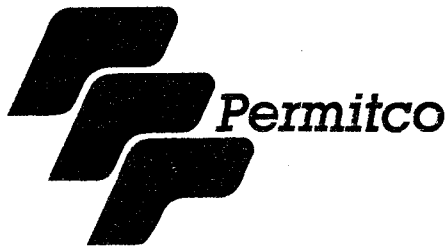
Sincerely,

RAYMOND T. DUNCAN

*W. S. Fallin*

W. S. Fallin  
Production Manager

WSF:kb



August 25, 1992

Bureau of Land Management  
Moab District  
P.O. Box 970  
Moab, UT 84532

Re: Duncan Energy Company  
Cave Canyon Federal #3-5  
NW SE Sec. 3, T38S - R24E  
San Juan County, Utah  
Lease No. U-47876

Gentlemen:

The above reference location was previously permitted by Raymond T. Duncan and approved by your office on July 16, 1992. The well was never drilled and the application was returned to Duncan on July 29, 1991.

Duncan Energy Company proposes to spud this well on approximately October 1, 1992 and therefore, we are resubmitting the required application.

If you should have any questions, or need additional information, please contact me at your earliest convenience.

Sincerely,

PERMITCO INC.

Lisa L. Smith  
Consultant for:  
Duncan Energy Company

Enc.

cc: Duncan Energy Company - Denver, CO  
Division of Oil, Gas & Mining - SLC, UT

Permitco Incorporated  
A Petroleum Permitting Company

13585 Jackson Drive Denver, Colorado 80241 (303) 452-8888

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS, AND MINING

(Other instructions on  
reverse side)

5. Lease Designation and Serial No.

U-47876

6. If Indian, Allottee or Tribe Name

N/A

7. Unit Agreement Name

Cave Canyon Unit

8. Farm or Lease Name

Cave Canyon Federal

9. Well No.

#3-5

Field and Pool, or Wildcat

Cave Canyon Field

Sec. T., R., M., or Blk.  
and Survey or Area

Sec. 3, T38S - R24E

12. County or Parrish

San Juan

13. State

Utah

DIVISION OF

OIL, GAS &amp; MINING

16. No. of acres in lease, if not to this well

40

22. Approx. date work will start\*

October 1, 1992

1a. Type of Work

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. Type of Well

Oil Well ☒Gas Well ☐

Other

Single Zone ☒Multiple Zone ☐

2. Name of Operator

303/759-3303

1777 S. Harrison St., PH-1

Duncan Energy Company

Denver, CO 80210

3. Address of Operator

303/452-8888

13585 Jackson Drive

Permitco Inc.

Denver, CO 80244

4. Location of Well (Report location clearly and in accordance with any State requirements.)

At surface

2150' FSL and 2550' FEL

At proposed prod. zone

NW SE Sec. 3

14. Distance in miles and direction from nearest town or post office\*

32 miles southeast of Monticello, UT

15. Distance from proposed location to nearest

property or lease line, ft.  
(Also to nearest drlg. line, if any)

90'

16. No. of acres in lease, if not to this well

1289.44

18. Distance from proposed location\* to nearest well, drilling, completed, or applied for, on this lease, ft.

approx. 800'

19. Proposed depth

6076'

20. Rotary or cable tools

Rotary

21. Elevations (Show whether DF, RT, GR, etc.)

5218' GR

23.

## PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
17-1/2"	13-3/8"	48#	120'	To surface
12-1/4"	8-5/8"	24#	2075'	1100 sx or suffic to circ to sur-
7-7/8"	5-1/2"	15.5#	6076'	400 sx or suffic to cover zones of interest.

Duncan Energy Company proposes to drill a well to 6076' to test the Ismay formation. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached.

We realize that the above location has been staked at non-standard footages in accordance with the spacing rules of the State of Utah, Division of Oil, Gas & Mining. This location was based on topography and seismic considerations and we request that you grant approval of an exception to spacing. Duncan Energy Company is the lessee of all of Sections 3 and 4, T38S - R24E.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

Signed

*Eric B. Smith*

Consultant for

Title. Duncan Energy Company

Date. 8/25/92

(This space for Federal or State office use)

Permit No.

43-037-31696

Approval Date

APPROVED BY THE STATE  
OF UTAH DIVISION OF  
OIL, GAS, AND MINING

Approved by

Title

Conditions of approval, if any:

DATE: 11/3/92

BY: *JAN Pittman*

WELL SPACING: 649-2-3

\*See Instructions On Reverse Side

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

PLUG BACK ☐

b. TYPE OF WELL

OIL  
WELL ☒

GAS  
WELL ☐

OTHER ☐

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR 303/759-3303

1777 S. Harrison St., PH-1

Duncan Energy Company

Denver, CO 80210

3. ADDRESS OF OPERATOR 303/452-8888

13585 Jackson Drive

Permitco Inc. - Agent

Denver, CO 80241

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

2150' FSL and 2550' FEL  
NW SE Sec. 3

At proposed prod. zone

RECEIVED

5. LEASE DESIGNATION AND SERIAL NO.

U-47876

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A

7. UNIT AGREEMENT NAME

Cave Canyon Unit

8. FARM OR LEASE NAME

Cave Canyon Federal

9. WELL NO.

#3-5

10. FIELD AND POOL, OR WILDCAT

Cave Canyon Field

11. SEC., T., R., M., OR BLK.  
AND SURVEY OR AREA

Sec. 3, T38S - R24E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

32 miles southeast of Monticello, UT

AUG 27 1992

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drilg. unit line, if any)

90'

16. NO. OF ACRES IN LEASE

1289.44

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

approx. 800'

19. PROPOSED LOCATION OF WELL

6076'

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

5218' GR

22. APPROX. DATE WORK WILL START\*

October 1, 1992

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	48#	120'	To surface
12-1/4"	8-5/8"	24#	2075'	1100 sx or suffic to circ to sur
7-7/8"	5-1/2"	15.5#	6076'	400 sx or suffic to cover zones of interest.

Duncan Energy Company proposes to drill a well to 6076' to test the Ismay formation. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached.

Be advised that Duncan Energy Company is considered to be the operator of the above well and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands.

Bond coverage for this well is provided by BLM Bond CO-0959 (Principal - Duncan Energy Company) via surety consent as provided for in 43 CFR 3104.3. It is understood that the BLM will hold the aforementioned operator and bond liable until the provisions of 43 CFR 3106.7-2 continuing responsibility are met.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] CONSULTANT FOR  
TITLE Duncan Energy Company DATE 8/25/92

(This space for Federal or State office use)

PERMIT NO. \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

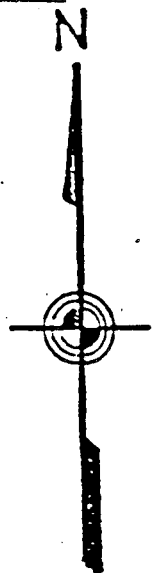
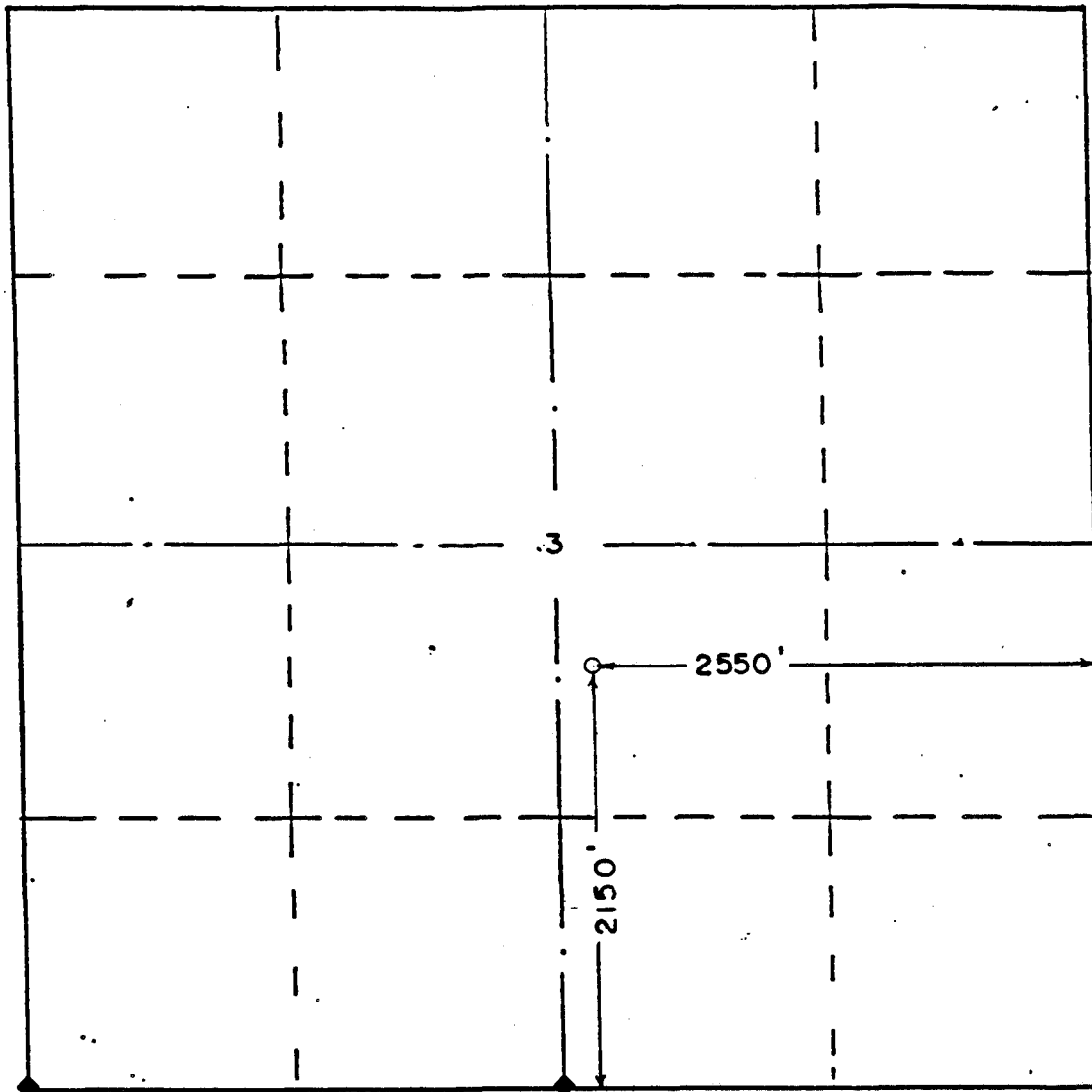
APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side

# WELL LOCATION AND ACREAGE DEDICATION PLAT

PLAT #1



1"=1000'

◆ brass cap

## WELL LOCATION DESCRIPTION:

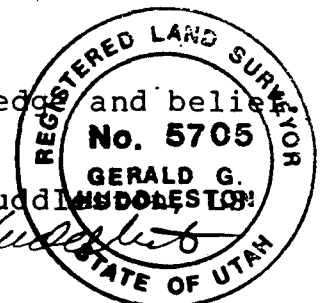
R. T. DUNCAN, Cave Canyon, 3 - 5  
 2150'FSL & 2550'FEL  
 Section 3, T.38 S., R.24 E., SLM  
 San Juan, UT.  
 5218' ground elevation

The above plat is true and correct to my knowledge and belief

29 May 1990

Gerald G. Huddleston

*Gerald G. Huddleston*



**CONFIDENTIAL - TIGHT HOLE**

**ONSHORE OIL & GAS ORDER NO. 1**

**Approval of Operations on Onshore  
Federal and Indian Oil and Gas Leases**

**CAVE CANYON FEDERAL #3-5**

**2150' FSL and 2550' FEL  
Section 3, T38S - R24E  
San Juan County, Utah**

**Prepared For:**

**DUNCAN ENERGY COMPANY**

**By:**

**PERMITCO INC.  
13585 Jackson Drive  
Denver, Colorado 80241  
303/452-8888**

**Copies Sent To:**

- 4 - BLM - Moab, Utah**
- 1 - Div. of Oil, Gas & Mining - SLC, Utah**
- 3 - Duncan Energy Company - Denver, CO**





**TABLE OF CONTENTS**  
**Cave Canyon #3-5**

**DRILLING PROGRAM**

**Page No.**

1.	Formation Tops	1
2.	Anticipated Depth of Oil, Gas & Water	1
3.	Blow Out Preventer Requirements	2
4.	Casing and Cement Program	2-3
5.	Mud Program	3
6.	Testing, Logging and Coring	3-4
7.	Abnormal Pressures & H <sub>2</sub> S Gas	4
8.	Other Information & Notification Requirements	4-6

**SURFACE USE PLAN**

1.	Existing Roads	1
2.	Access Roads to be Constructed or Reconstructed	1-2
3.	Location of Wells Within 1-Mile	2
4.	Proposed Production Facilities	2-3
5.	Water Supply	4
6.	Construction Materials	4
7.	Waste Disposal	4-5
8.	Ancillary Facilities	5
9.	Wellsite Layout	5-6
10.	Reclamation	6
11.	Surface/Minerals Ownership	7
12.	Other Information	7-9
13.	Certification	9

Duncan Energy Company  
Cave Canyon Federal #3-5  
 2150' FSL and 2550' FEL  
 NW SE Sec. 3, T38S - R24E  
 San Juan County, Utah

Drilling Program

Page 1

ONSHORE OIL & GAS ORDER NO. 1

Approval of Operations on Onshore  
 Federal and Indian Oil and Gas Leases

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Orders, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

1. The surface formation and estimated formation tops to be encountered are as follows:

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>
Dakota	Surface	
Hermosa Group	698'	+ 533'
Ismay	5698'	- 467'
Upper Ismay Porosity	5749'	- 518'
Lower Ismay	5870'	- 639'
Gothic Shale	5917'	- 686'
Desert Creek	5944'	- 713'
Lower Desert Creek Por.	6001'	- 770'
Chimney Rock Shale	6020'	- 789'
Akah	6043'	- 812'
T.D.	6076'	- 845'

2. The estimated depths at which oil, gas, water or other mineral bearing zones are expected to be encountered are as follows:

<u>Substance</u>	<u>Formation</u>	<u>Anticipated Depth</u>
Oil	Ismay	5749'

All fresh water and prospectively valuable minerals (as described by BLM at onsite) encountered during drilling, will be recorded by depth cased and cemented. All oil and gas shows will be tested to determine commercial potential.



Permitco Incorporated  
 A Petroleum Permitting Company

Duncan Energy Company  
Cave Canyon Federal #3-5  
 2150' FSL and 2550' FEL  
 NW SE Sec. 3, T38S - R24E  
 San Juan County, Utah

Drilling Program  
 Page 2

3. Pressure control equipment will consist of a 10", 3000# BOP. (See BOP Diagram attached.)

BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

4. a. Casing

The proposed casing program is as follows:

<u>Purpose</u>	<u>Depth</u>	<u>Hole Size</u>	<u>O.D.</u>	<u>Wt.</u>	<u>Grade</u>	<u>Type</u>	<u>New or Used</u>
Conductor	0-120'	17-1/2"	13-3/8"	48#	----	-----	New
Surface	0-2075'	12-1/4"	8-5/8"	24#	K-55	ST&C	New
Produc.	0-6076'	7-7/8"	5-1/2"	15.5#	K-55	LT&C	New

- b. If unconsolidated rock is encountered, conductor shall be set ten (10) feet into underlying bedrock with cement circulated to surface.
- c. Surface casing shall be set at least 50 feet into the Chinle Formation, regardless of the depth the Chinle is encountered.

- d. Cement

The cementing program will be as follows:

<u>Conductor</u>	<u>Type and Amount</u>
0-120'	Sufficient to circulate to surface

<u>Surface</u>	<u>Type and Amount</u>
0-2075'	1100 sx or sufficient to circulate to surface.

ONSHORE OIL & GAS ORDER NO. 1  
Duncan Energy Company  
Cave Canyon Federal #3-5  
2150' FSL and 2550' FEL  
NW SE Sec. 3, T38S - R24E  
San Juan County, Utah

CONFIDENTIAL - TIGHT HOLE

Drilling Program  
Page 3

Production

Type and Amount

400 sx or - sufficient to cover zones of interest.

Anticipated cement tops will be reported as to depth, not the expected number of sacks.

c. Auxiliary Equipment will be as follows:

1. Kelly cock.
2. Float above the bit.
3. A sub with a full opening valve will be on the floor when the kelly is not in use.

5. Drilling fluid will be as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>F/L</u>	<u>PH</u>
0-4400'	Natural	9.0-9.2	35	10-20	--
4400-T.D.	Chem. Gel	9.2-9.5	45	10 thru pays	

Operations will be conducted in accordance with ONSHORE OIL & GAS ORDER NO. 2; DRILLING OPERATIONS, except where advance approval for a variance has been obtained.

6. Coring, logging and testing programs are as follow

- a. No cores are anticipated.
- b. The logging program will consist of the following: A Dual Induction will be run from 1800' to T.D. A BHC Acoustic and CNL/FDC will be run from 5500' to T.D.
- c. No drill stem tests are anticipated.

Duncan Energy Company  
Cave Canyon Federal #3-5  
2150' FSL and 2550' FEL  
NW SE Sec. 3, T38S - R24E  
San Juan County, Utah

Drilling Program  
Page 4

Whether the well is completed as a dry hole or as a producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted to the District Office not later than thirty (30) days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1(b). Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the Moab District Manager.

7. Abnormal conditions, bottom hole pressures and potential hazards.
  - a. The maximum bottom hole pressure to be expected is 2200 psi.
8. Anticipated Starting Dates and Notifications of Operations
  - a. Duncan Energy Company plans to spud the Cave Canyon Federal #3-5 on approximately October 1, 1992 and intends to complete the well within approximately one month after the well has reached T.D.
  - b. If a replacement rig is needed for completion operations, a Sundry Notice (Form 3160-5) to that effect will be filed for prior approval from the District Office, and all conditions of this approved plan are applicable during all operations conducted with the replacement rig. In emergency situations, verbal approval to bring on a replacement rig will be approved through the District Office.
  - c. Required verbal notifications are summarized in Table I, attached. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the District Office within twenty four (24) hours after spudding. If the spudding occurs on a weekend or holiday, the written report will be submitted on the following regular work day.

**Duncan Energy Company****Cave Canyon Federal #3-5****2150' FSL and 2550' FEL****NW SE Sec. 3, T38S - R24E****San Juan County, Utah****Drilling Program****Page 5**

- d. In accordance with Onshore Oil and Gas Order No. 1, this well will be reported on Form 3160-6, "Monthly Report of Operations", starting with the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with Minerals Management Service.
- e. Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported to the Resource Area in accordance with requirements of NTL-3A.
- f. Should the well be successfully completed for production, the District Manager will be notified when the well is placed in producing status. Such notification will be sent by telegram or other written communication, not later than five (5) business days following the date on which the well is placed on production.
- g. A first production conference may be scheduled within fifteen (15) days after receipt of the first production report. The Resource Area Office will coordinate the field conference.
- h. A Subsequent Report of Abandonment" (Form 3160-5) will be filed with the District Manager within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the Area Manager or his representative, or the appropriate surface managing agency.
- i. Approval to vent/flare gas during initial well evaluation will be obtained from the District Office. This preliminary approval will not exceed 30 days or 50 MMCF gas. Approval to vent/flare beyond this initial test period will require District Office Approval pursuant to guidelines in NTL-4A.
- j. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6(d) and Onshore Oil and Gas Order No. 2.

Duncan Energy Company

Cave Canyon Federal #3-5

2150' FSL and 2550' FEL

NW SE Sec. 3, T38S - R24E

San Juan County, Utah

Drilling Program

Page 6

- k. The following minimum information will be permanently placed on the marker with a plate, cap, or beaded-on with a welding torch:

Well name and number, location by 1/4 1/4 section, township and range,  
Lease number and operator.

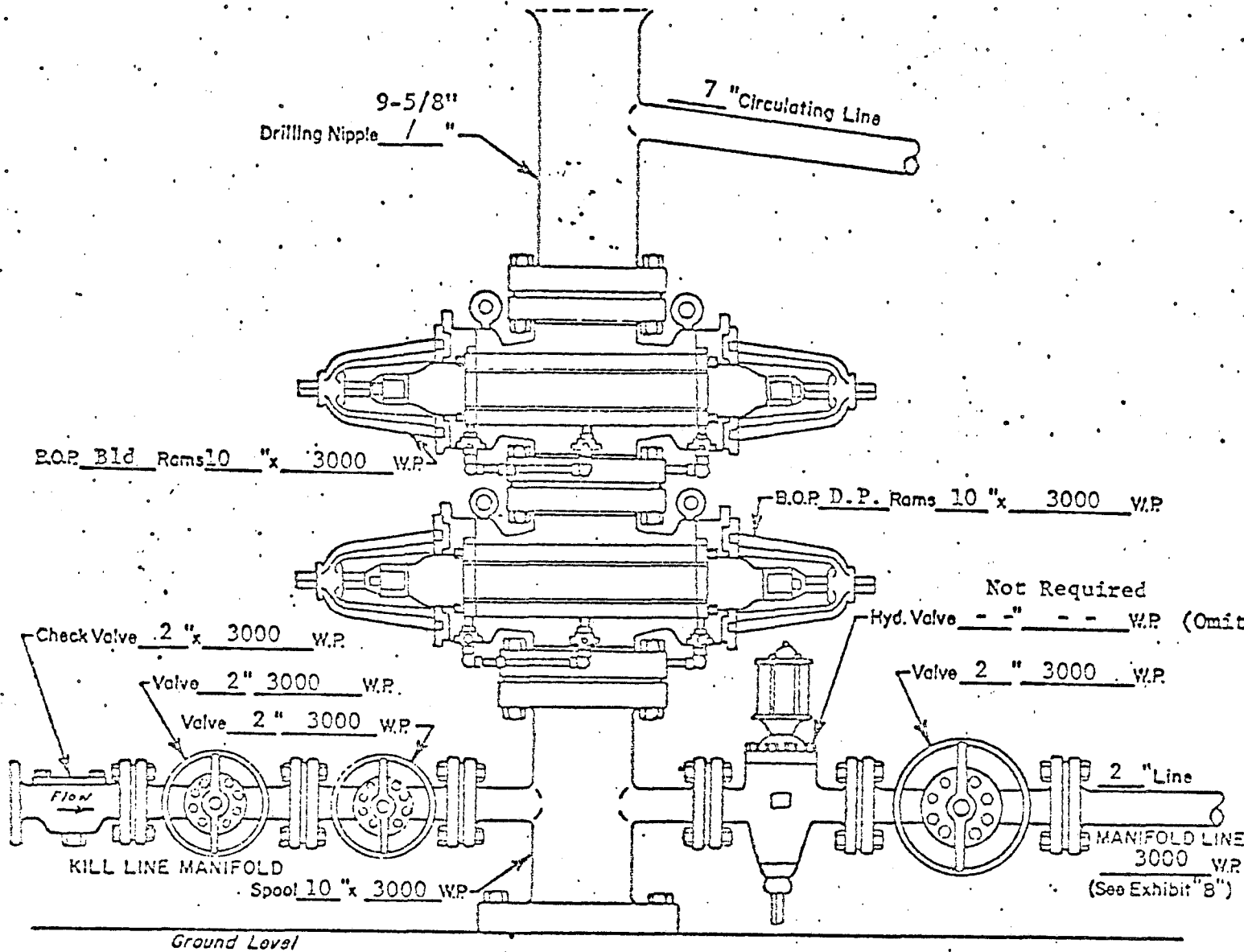


**Permitco Incorporated**  
A Petroleum Permitting Company

COLEMAN DRILLING CO.

WELL NAME: \_\_\_\_\_

LOCATION : \_\_\_\_\_



WELL HEAD B.O.P.

3000 # W.P.

☒ Hydraulic



Duncan Energy Company

Cave Canyon Federal 3-5

2150' FSL and 2550' FEL

NW SE Section 3, T38S - R24E

San Juan County, Utah

Surface Use Plan

Page 1

Thirteen Point Surface Use Plan

1. Existing Roads

- a. The proposed well site is located 32 miles southeast of Monticello, Utah.
- b. Directions to the location from Monticello are as follows:

From the south edge of town go South on Highway 191 for 11.6 mile. Turn left (east) Alkali #204 (County Road) and proceed east and south for 3.1 miles to a fork in the road. Turn left and continue on Alkali #204 in a southeasterly direction for an additional 15 miles. Turn left (east) onto Perkins Road #206 and proceed 2.0 miles. Turn north onto an existing oilfield road and proceed approximately 800 feet to the #3-2 tank battery. Continue westerly for approximately 1000 feet to the proposed location.

- c. The roads in the area are primarily county roads. See Map #1.
- d. Improvement to the existing access will not be necessary.
- e. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.
- f. An encroachment permit will be obtained from the San Juan County Road Department, 801/587-2231, ext. 43.

2. Planned Access Roads

- a. There will be approximately 1000 feet new access. This access was flagged at the time of staking.
- b. The maximum total disturbed width will be 30 feet.

**ONSHORE OIL & GAS ORDER NO. 1**

**Duncan Energy Company**

**Cave Canyon Federal 3-5**

**2150' FSL and 2550' FEL**

**NW SE Section 3, T38S - R24E**

**San Juan County, Utah**

**CONFIDENTIAL - TIGHT HOLE**

**Surface Use Plan**

**Page 2**

- c. The maximum grade will be 6%.
  - d. No turnouts will be necessary.
  - e. One low water crossing will be necessary as shown on Map #1. A hard rock bottom exists at the crossing point.
  - f. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance by the surface owner.
  - g. The access road (including any existing non-county) road will be brought to Resource (Class III) Road Standards by meeting the minimum design requirements within sixty (60) days of completion of drilling operations.
  - h. All topsoil from the access road will be reserved in place.
3. **Location of Existing Wells Within a 1-Mile Radius of the Proposed Location.**  
**(See Map #1).**
- a. Water Wells - one
  - b. Injection or disposal wells - one
  - c. Producing Wells - four
  - d. Drilling Wells - none
4. **Location of Tank Batteries and Production Facilities.**
- a. All permanent structures (onsite for six months or longer) will be painted a neutral, nonreflective, (Juniper Green) color to blend into the

ONSHORE OIL & GAS ORDER NO. 1  
Duncan Energy Company  
Cave Canyon Federal 3-5  
2150' FSL and 2550' FEL  
NW SE Section 3, T38S - R24E  
San Juan County, Utah

CONFIDENTIAL - TIGHT HOLE

Surface Use Plan  
Page 3

surrounding area, except for those required to comply with the Occupational Safety and Health Act (OSHA) or written company safety manual or documents.

- b. If a tank battery is constructed on this location, it will be surrounded by a dike of sufficient capacity to contain 1-1/2 times the storage capacity of the largest tank; all load lines and valves will be placed inside the dike surrounding the tank battery.
- c. All site security guidelines identified in 43 CFR 3162.7-5 and ONSHORE OIL & GAS ORDER NO. 3; SITE SECURITY will be adhered to.
- d. Gas measurement will be conducted in accordance with the ONSHORE OIL & GAS ORDER NO. 5; GAS MEASUREMENT and 43 CFR 3162.7-3.
- e. Gas meter runs for each well will be located within five hundred (500) feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and downstream for the remainder of the pad. Meter runs will be housed and/or fenced.
- f. Oil measurement will be conducted in accordance with ONSHORE OIL & GAS ORDER NO. 4; OIL MEASUREMENT as of the effective date of August 23, 1989 and 43 CFR 3162.7-2.
- g. If the well is productive, the production facilities will be located at a central tank battery located at the Cave Canyon #3-2 in the NE SW Section 3, T38S - R24E, San Juan County, Utah.
- h. Any necessary pits will be properly fenced to prevent any wildlife entry. The production pit will be flagged overhead.

Duncan Energy Company

Cave Canyon Federal 3-5

2150' FSL and 2550' FEL

NW SE Section 3, T38S - R24E

San Juan County, Utah

Surface Use Plan

Page 4

5. Location and Type of Water Supply

- a. All water needed for drilling purposes will be obtained from the Cave Canyon Water Source well located approximately 80 feet SW of the Cave Canyon #3-2 producing well. Other water may be obtained from the Richard Gore Artesian wells.
- b. Water will be trucked to location over the county roads in the area.
- c. No water well is to be drilled on this lease.
- d. Use of water for this operation will approved by obtaining a temporary use permit from the Utah State Engineer, in Price, Utah, 801/637-1303.
- e. Water obtained on private land, or land administered by another agency, will require approval from the owner or agency for use of the land.

6. Source of Construction Material

- a. Road surfacing material will be obtained from on-site and in place materials.
- b. The use of materials under BLM jurisdiction will conform t 43 CFR 3610.

7. Methods for Handling Waste Disposal

- a. The reserve pit will be constructed with at least 1/2 of the capacity in cut material and will be lined with 24 tons of bentonite.
- b. Three sides of the reserve pit will be fenced within 24 hours after completion of construction and the fourth side within 24 hours after

ONSHORE OIL & GAS ORDER NO. 1  
Duncan Energy Company  
Cave Canyon Federal 3-5  
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NW SE Section 3, T38S - R24E  
San Juan County, Utah

CONFIDENTIAL - TIGHT HOLE

Surface Use Plan  
Page 5

drilling operations cease with four (4) strands of barbed wire, or woven wire topped with barbed wire to a height of not less than four (4) feet. The fence will be kept in good repair while the pit is drying.

- c. No liquid hydrocarbons (i.e. fuels, lubricants, formation) will be discharged to the reserve pit.
- d. No chrome compounds will be on location.
- e. All trash will be placed in a trash basket and hauled to a county refuge facility as necessary.
- f. Produced waste water will be confined to the reserve pit for a period not to exceed ninety (90) days after initial production. During the 90-day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Manager's approval pursuant to NTL-2B.

8. Ancillary Facilities

- a. There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

- a. See Diagram #1 for rig layout. See Diagram #2 for cross section of drill pad. See Diagram #3 for cuts and fills.
- b. The location of mud tanks; reserve, trash cage; pipe racks; living facilities and soil stockpiles will be shown on Diagrams #1 and #3. The location will be laid out and constructed as discussed during the predrill conference.

- c. 12 inches of topsoil material will be removed and stockpiled on the uphill side of the location as shown on Diagrams #1 & #3.
- d. Access to the well pad will be as shown on Map #1.

10. Reclamation

- a. Within 24 hours of completion of drilling, the location and surrounding area will be cleared of all remaining debris, materials, and junk not required for production.
- b. As soon as the reserve pit has dried or within eighteen (18) months whichever is least, all areas not needed for production (including access road) will be filled in, recontoured to approximately natural contours and 12 inches of topsoil replaced leaving enough for future restoration (unless the well is a dry hole). The remaining topsoil (if any) will be stabilized and seeded in place.
- c. The area will be seeded between October 1 and February 28 with:
  - 3 lbs/acre Indian Ricegrass
  - 8 lbs/acre Crested wheatgrass
  - 5 lbs/acre Fourwing saltbush
  - 3 lbs/acre Forage Kochia

Prior to seeding the location will be ripped 12 inches deep and 18 inches apart after recontouring. After broadcasting of seed a light harrow will be dragged over the location to bury the seed. If the seed is drilled, the seeding rate may be 75% of the above rates. Water bars may be required upon rehabilitation at the discretion of the Authorized Officer.

- h. The reserve pit and that portion of the location and access road not needed for production and production facilities will be reclaimed.

ONSHORE OIL & GAS ORDER NO. 1  
Duncan Energy Company  
Cave Canyon Federal 3-5  
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NW SE Section 3, T38S - R24E  
San Juan County, Utah

CONFIDENTIAL - TIGHT HOLE

Surface Use Plan  
Page 7

11. a. Surface Ownership

Bureau of Land Management

b. Mineral Ownership

Bureau of Land Management

12. Other Information

- a. There will be no deviation from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be observed. All wells, whether drilling producing, suspended, or abandoned and/or separate facilities, will be identified in accordance with 43 CFR 3162.6.
- b. "Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.6.
- c. The dirt contractor will be provided with an approved copy of the surface use plan.
- d. An archeological study was conducted by LaPlata Archeological Consultants. No significant cultural resources were found and clearance is recommended. A copy of this report will be submitted directly by LaPlata Archeological Consultants.
- e. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during

construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places:
  - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
  - a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.
- f. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.
- g. This permit will be valid for a period of one year from the date of approval. After permit termination, a new application will be filed for approval for any future operations.
- h. If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to a contraction in the unit or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligation determined by the authorized officer.



ONSHORE OIL & GAS ORDER NO. 1  
Duncan Energy Company  
Cave Canyon Federal 3-5  
2150' FSL and 2550' FEL  
NW SE Section 3, T38S - R24E  
San Juan County, Utah

CONFIDENTIAL - TIGHT HOLE

Surface Use Plan  
Page 9

- i. In order to protect important deer winter range; exploration, drilling, and other development activity will be allowed only during the period from April 1 to November 30. Exceptions to this limitation in any year may be specifically authorized in writing by the District Engineer, Geological Survey, with the concurrence of the District Manager, Bureau of Land Management.

13. Lessee's or Operator's Representative and Certification

Permit Matters  
PERMITCO INC.  
Lisa L. Smith  
13585 Jackson Drive  
Denver, CO 80241  
303/452-8888


Drilling & Completion Matters  
DUNCAN ENERGY COMPANY  
1777 S. Harrison St.  
Penthouse One  
Denver, CO 80210  
303/759-3303 (W) -  
303/733-3604 (H) - John Bettridge

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Duncan Energy Company and its contractors and subcontractors in conformity with the plan and the term and conditions under which it is approved.

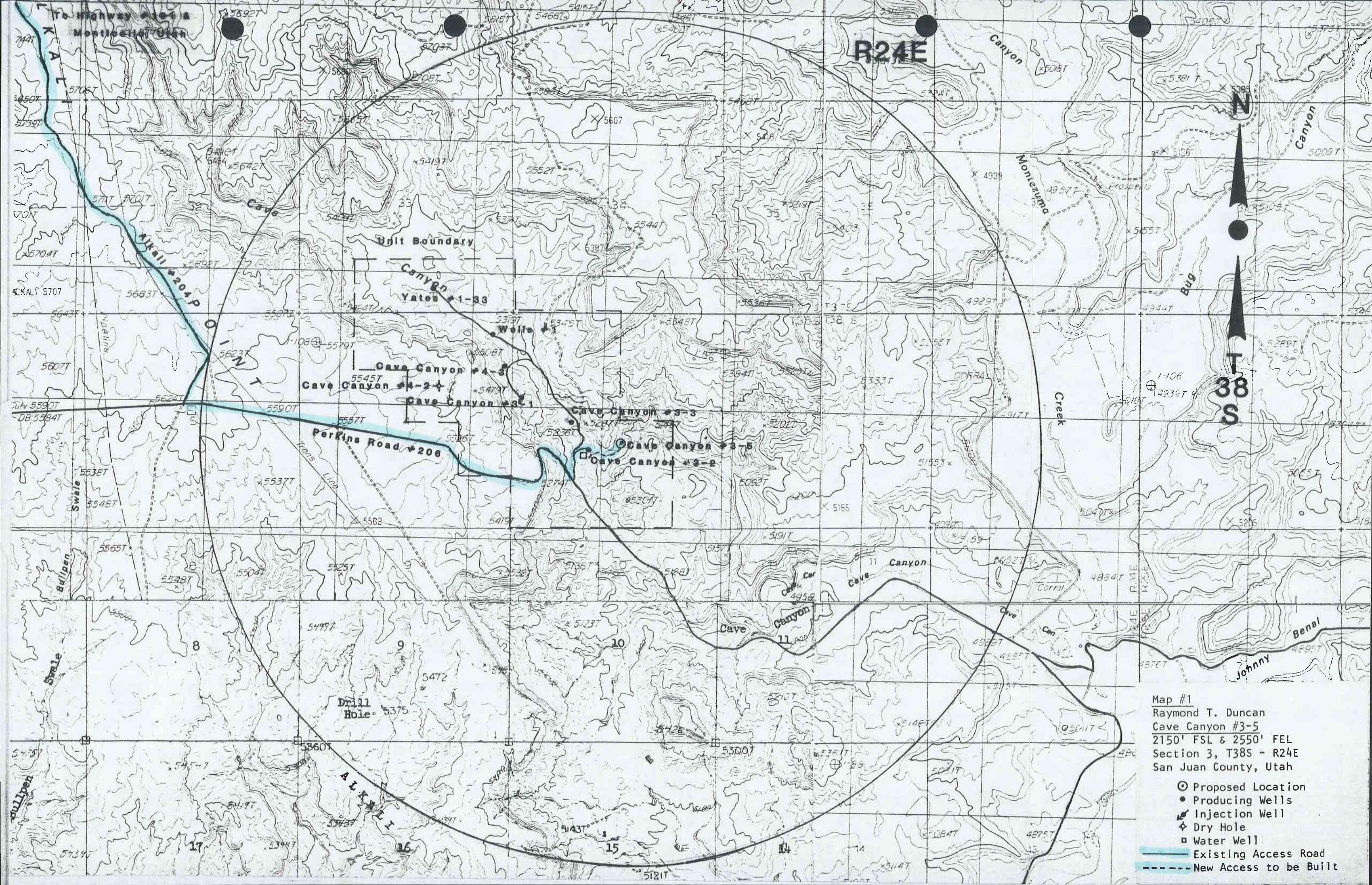
This statement is subject to the provision of 18 U.S.C. 1001 for the filing of a false statement.

August 25, 1992  
Date:

  
Lisa L. Smith - PERMITCO INC.  
Authorized Agent for:  
DUNCAN ENERGY COMPANY



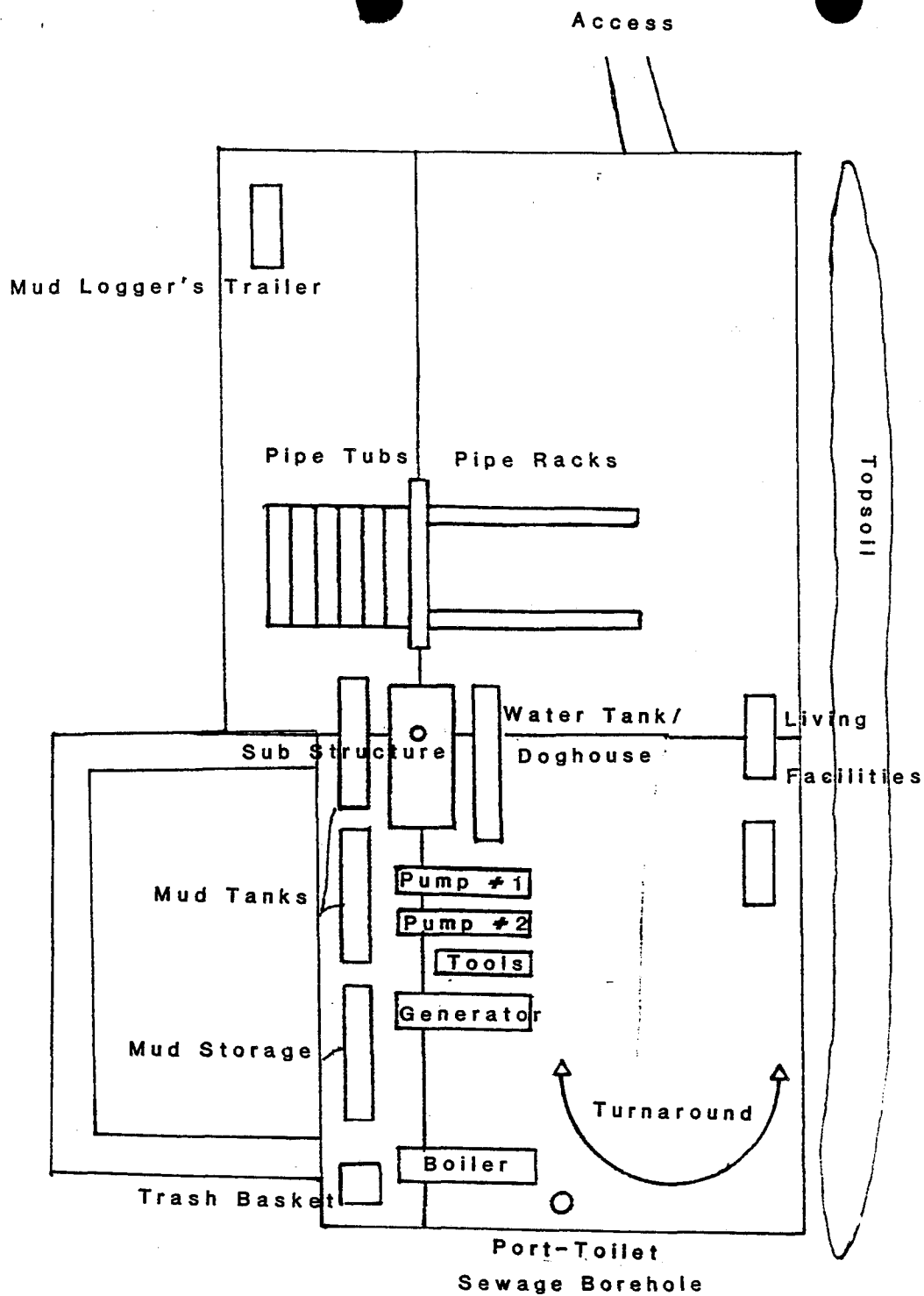




Map #1  
Raymond T. Duncan  
Cave Canyon #3-5  
2150' FSL & 2550' FEL  
Section 3, T38S - R24E  
San Juan County, Utah

- Proposed Location
- Producing Wells
- ✱ Injection Well
- ◇ Dry Hole
- Water Well
- Existing Access Road
- - - New Access to be Built





Scale 1"=50'

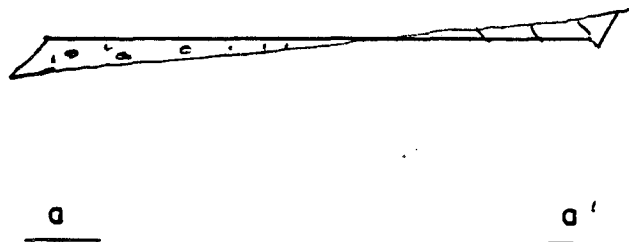
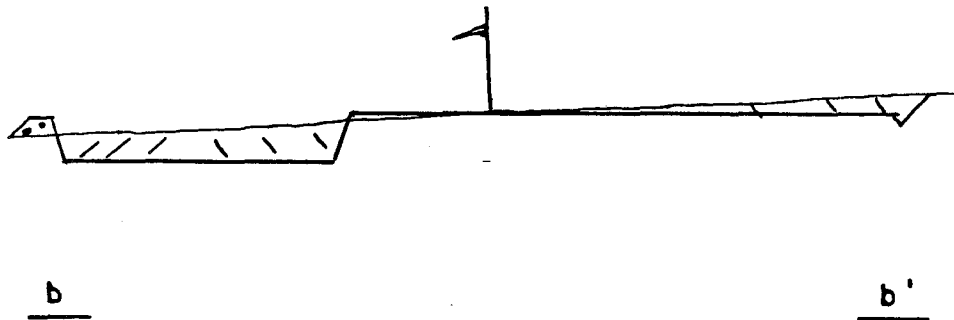
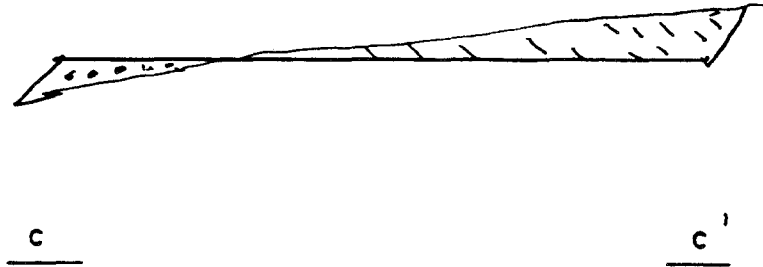
Diagram #1  
 Raymond T. Duncan  
 Cave Canyon #3-5  
 2150' FSL & 2550' FEL  
 Section 3, T38S - R24E  
 San Juan County, Utah

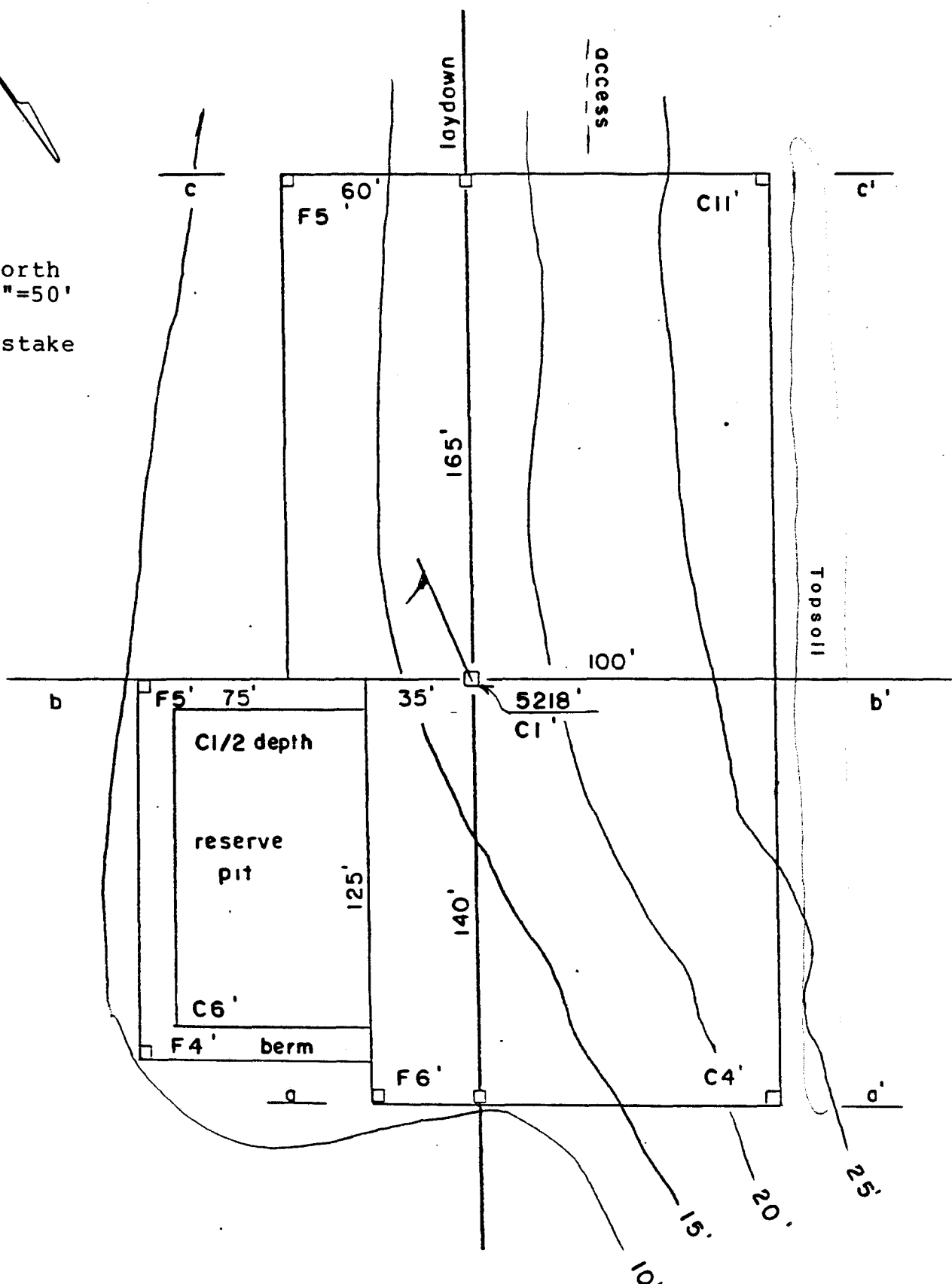
Diagram #2  
Raymond T. Duncan  
Cave Canyon #3-5  
2150' FSL & 2550' FEL  
Section 3, 38S - R24E  
San Juan County, Utah

Cross Section

Cut ////  
Fill - -

1"=50' Horz. & Vert.





**ARCHAEOLOGICAL SURVEY OF  
RAYMOND T. DUNCAN'S  
CAVE CANYON FEDERAL 3-5 WELL PAD AND ACCESS ROAD  
SAN JUAN COUNTY, UTAH**

**LAC REPORT 9076b**

By  
Steven L. Fuller

LA PLATA ARCHAEOLOGICAL CONSULTANTS  
P.O. BOX 783  
DOLORES, COLORADO 81323  
(303) 882-4933

June 4, 1990

FEDERAL ANTIQUITIES PERMIT  
89UT57626  
UTAH STATE PERMIT  
U90-LA-218b

Prepared for:

Raymond T. Duncan  
1777 South Harrison, Penthouse 1  
Denver, Colorado 80210

## **ABSTRACT**

The archaeological survey of Raymond T. Duncan's Cave Canyon Federal 3-5 well pad and access road was conducted by personnel of La Plata Archaeological Consultants on May 30, 1990. The project is located in San Juan County, Utah on lands administered by the Bureau of Land Management, San Juan Resource Area. A 100 foot wide corridor was surveyed along the 1000 foot access road and a 650 by 650 foot area (10 acres) was surveyed surrounding the well center stake. No archaeological sites were recorded during this survey and archaeological clearance is recommended for the project.

## **INTRODUCTION**

On May 30, 1990 the archaeological survey of Raymond T. Duncan's Cave Canyon Federal 3-5 well pad and access road was conducted by Steven L. Fuller of La Plata Archaeological Consultants. The survey was requested by Ms. Lisa Smith of Permitco, who was acting as a permit agent for Raymond T. Duncan. The well pad and access road are on lands administered by the Bureau of Land Management, San Juan Resource Area and are in San Juan County, Utah.

The project is located in T38S, R24E, Section 3, SE 1/4 and SW 1/4. The project is included on the USGS Bradford Canyon, Utah (1985 provisional) 7.5' series topographic map (Figure 1). The project will involve construction of a well pad which will measure about 300 by 230 feet, and about 1000 feet of access road which will extend from an existing oilfield road to the southwest. A total of 12.3 acres were examined for this project.

## **PHYSIOGRAPHY AND ENVIRONMENT**




The project area is located in Cave Canyon, on an open bench to the northwest of the canyon bottom. Sandstone outcrops rise to the northwest and the topography drops off gently to the southeast into the Cave Canyon wash bottom. Soils are very shallow and are formed on residual shale and sandstone deposits. Vegetation consists of grasses, snakeweed, shadscale, with sparse pinyon and juniper to the northwest on sandstone outcrops and ridges.

The present land use pattern includes livestock grazing and oil and gas development. The closest water sources are probably springs and seeps in Cave Canyon.

[illegible]

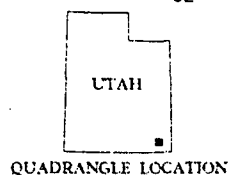
INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-1980

Improved Road . . . . .	=====
Unimproved Road . . . . .	-----
Trail . . . . .	-----

 Interstate Route    U.S. Route    State Route

BRADFORD CANYON, UTAH  
PROVISIONAL EDITION 1985

37109-E3-TF-024



1	2	3	1 Blanding North
			2 Devil Mesa
			3 Horsehead Point
4		5	4 Blanding South
			5 Box Canyon
			6 Big Bench
6	7	8	7 McCracken Spring
			8 Hath Trading Post

-2-

### ADJOINING 7.5' QUADRANGLE NAMES

1248708  
100 0225



## **SURVEY PROCEDURES**

The official file search was conducted with the BLM files located in the San Juan Resource Area Office on May 29, 1990. This search indicated that numerous archaeological surveys have been conducted in the vicinity of the project area, primarily several well pad surveys conducted by La PLata for Raymond T. Duncan. Several seismic lines have also been surveyed by AERC, DCA, and La Plata during the early and mid-1980s. The nearest previously recorded site, 42SA14614, appeared to have been recorded on the east edge of the survey area but was probably mislocated on the old 15' map and probably is 400 or 500 feet to the northeast in some boulders. The site will not be affected by this proposed project.

The on-the-ground survey consisted of walking a zigzag transect down one side of the access road centerline and returning down the opposite side. A total width of 100 feet was covered with transect spacing averaging 50 feet or about 15 m. The proposed alignment was flagged during the final archaeological survey. Parallel pedestrian transects spaced about 15 m apart were used to cover the 650 by 650 foot (10 acre) area surrounding the well center stake.

The access road and well pad together contain a total of 12.3 acres which were inventoried for cultural resources for this project. All acreage is administered by the Bureau of Land Management, San Juan Resource Area.

## **SURVEY RESULTS**

No cultural resources were found during the survey for this proposed well pad, access road, and pipeline and it is unlikely that buried cultural deposits are present.

## **CONCLUSIONS AND RECOMMENDATIONS**

The archaeological survey for Raymond T. Duncan's Cave Canyon Federal 3-5 access road and well pad was conducted on May 30, 1990 by personnel of La Plata Archaeological Consultants. The project is located on lands administered by the Bureau of Land Management, San Juan Resource Area. No cultural resources were found and archaeological clearance is recommended for the project.

**SAN JUAN COUNTY ROAD DEPARTMENT**

**Application for Right-of-Way Encroachment Permit**

**DATE:** 8/25/92

**TO: Road Supervisor**  
**San Juan County Road Department**

**Application is hereby made by: (1)** Duncan Energy Company c/o PERMITCO INC.

**Address (2)** 13585 Jackson Drive Denver, CO 80241

**Telephone Number:** 303/452-8888 **for permission to do the following:**

**(3)** To use existing County Roads to obtain access to a proposed drillsite

located as follows:

Cave Canyon Fed. #3-5, 2150' FSL and 2550' FEL, NW SE Sec. 3, T38S - R24E

**(4) Location:** Approximately 32 miles southeast of Monticello, Utah.

Roads to be used will be Alkali #204 and Perkins #206.

Proposed spud date is October 1, 1992

**City**                      **County** San Juan **State** Utah

**or U. S. Highway No.**                      **Milepost No.**                     

**in accordance with the attached plan. (5)**

**(6) Construction will begin on or about** N/A **19**

**and will be completed on or before**                      **19**

**If the proposed installation requires breaking of the pavement, give the following information:**

**a. Type of pavement:** N/A

**b. The opening to be made will be** N/A **feet long**  
**by**                      **feet wide and**                      **feet deep.**

**c. A bond in the amount of \$** N/A **has been posted with**  
**Telephone No.**                     

**to run of a term of three (3) years after completion of work to guarantee satisfactory performance.**

**(7) If this permit is granted, we agree to comply with all conditions, restriction, and regulations as contained in the "Regulations for the Control nad Protection of State Highway Rights-of-Way", approved by the Utah State Road Commission on October 8, 1962, and all revisions thereto or Regulations adopted by the San Juan County Commission.**

**(8) In approving this application and locations of utilities, and effort will be made to approve only locations that will not be effected in the event that San Juan County changes the roadway. But, in situations in which the utility has to be moved, this moving shall be done by the utility company or paid for by the company.**

**(9) For any and all applications requesting authority to Vibroseise, applicants shall:**

- a. Provide map showing where vibroseising will take place.**
- b. Agree to repair any damages or replace any property damaged.**
- c. Take full responsibility or proper flagging and traffic control.**

**\$5.00 Filing Fee Attached.**

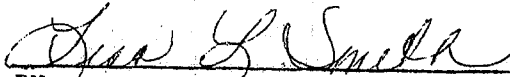
d. Agree that Vibroseising done in the area of dirt roads shall done on the dirt road rather than in the bar ditch to minimize damage.

e. Provide a schedule of the planned work and estimated dates of completion.

f. Attach written permission form all adjacent fee-title owners.

g. Tha San Juan County Commission has authorized the San Juan County Road Superintendent (or his Assignees) to issue permits.

(10) San Juan County can only grant permission to the extent that the County has the authority to do so and the permission granted hereunder is limited to the interest of authority actually owned by San Juan County and no warranties of ownership or authority to grant permission is expressed or implied by the granting of this permit.



BY: Lisa L. Smith - PERMITCO INC.

Authorized Agent for Duncan Energy Company  
TITLE

To be filled in by Road Supervisor.

(1) Permit should be granted \_\_\_\_\_

Permit should not be granted \_\_\_\_\_

(2) Additional requirements which should be imposed.

\_\_\_\_\_  
ROAD SUPERVISOR

#### INSTRUCTIONS

(1) \*Application for this permit should be made in duplicate by whoever will actually do the work whether it be the owner or a contractor.

(2) Mailing address of applicant.

(3) State fully and completely the type or installaion, type of construction, width, thickness, drainage data, etc., where applicable. If pole line, give the following information: number of poles, total length of line, type of wire, character of service, vertical clearance over roadway, and voltage of power line.

(4) If pipe line or buried cable, give the follwing information: Type of service, size and length of line, depth of trench, kind of pipe, (sewer, gas, oil, water supply, etc.) or conduit, and if pipe is to be driven or if pavement will be broken. All fluid lines requires encasement with suitable material. The size and length of encasement shall be satisfactory to the State Department of Transportation, San Juan County Road Supervisor or his agent.

(5) Give distance from some geographical point such as intersecting highways, city, or coporate limits. Give city, county, and state or U. S. route number.

(6) Attach two (2) copies of a plan showing proposed location of structures with reference ot pavement and right-of-way lines. If installation crosses the highway, show cross section of present roadway and proposed installation.

(7) Give anticipated dates for beginning and for completion of proposed installation.

Note: A fee of five (5) dollars will be charged for all Right-of-Way Encroachments Permits, except those obtained for pole lines, and buried cable lines. This Permit fee, where applicable, should be submitted with the application. The costs of inspection are included in the Right-of-Way Encroachment Permit fee, except for pole lines, pipe lines, and buried cable lines which shall be billed for the inspection.

WORKSHEET  
APPLICATION FOR PERMIT TO DRILL

DATE RECEIVED: 06/13/90

OPERATOR: DUNCAN ENERGY COMPANY  
WELL NAME: CAVE CANYON FEDERAL 3-5

OPERATOR ACCT NO: N- 3370

API NO. ASSIGNED: 43 - 037 - 31696

LEASE TYPE: FED LEASE NO: U-47876  
LOCATION: NWSE 03 - T38S - R24E SAN JUAN COUNTY  
FIELD: UNDESIGNATED FIELD CODE: 3023

RECEIVED AND/OR REVIEWED:

☒ Plat  
☒ Bond  
(Number 1 Federal)  
☒ Potash (Y/N)  
☒ Oil shale (Y/N)  
☒ Water permit  
(Number 09-1808TW6548)  
☒ RDCC Review (Y/N)  
(Date: \_\_\_\_\_)

LOCATION AND SITING:

Cave Canyon Field  
☒ R649-2-3. Unit: Secondary Recovery  
☐ R649-3-2. General.  
☒ R649-3-3. Exception.  
☐ Drilling Unit.  
Board Cause no: \_\_\_\_\_  
Date: \_\_\_\_\_

COMMENTS: Exception location requested

☒ Water Permit received 11-01-90

Cave Canyon Field Secondary Recovery Unit approved  
June 23, 1989 - Cause No. 217-1.

STIPULATIONS: \_\_\_\_\_

CONFIDENTIAL  
PERIOD  
EXPIRED  
ON 1-23-94

DATE RECEIVED: 08/27/92

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

PLUG BACK ☐

b. TYPE OF WELL

OIL  
WELL ☒

GAS  
WELL ☐

OTHER ☐

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR 303/759-3303

1777 S. Harrison St., PH-1

Duncan Energy Company

Denver, CO 80210

3. ADDRESS OF OPERATOR 303/452-8888

13585 Jackson Drive

Permitco Inc. - Agent

Denver, CO 80241

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

2150' FSL and 2550' FEL

At proposed prod. zone

NW SE Sec. 3

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

32 miles southeast of Monticello, UT

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any)

90'

18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,

OR APPLIED FOR, ON THIS LEASE, FT.

approx. 800'

16. NO. OF ACRES IN LEASE

1289.44

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

19. PROPOSED DEPTH

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

22. APPROX. DATE WORK WILL START\*

October 1, 1992

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	48#	120'	To surface
12-1/4"	8-5/8"	24#	2075'	1100 sx or suffic to circ to su
7-7/8"	5-1/2"	15.5#	6076'	400 sx or suffic to cover zones of interest

RECEIVED

NOV 02 1992

DIVISION OF  
OIL GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

*[Signature]*

Consultant for

TITLE Duncan Energy Company

DATE 8/25/92

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Assistant District Manager  
for Minerals

OCT 30 1992

APPROVED BY

/S/ WILLIAM C. STRINGER

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

FLARING OR VENTING OF  
GAS IS SUBJECT TO NTL 4-A  
Dated 1/1/80

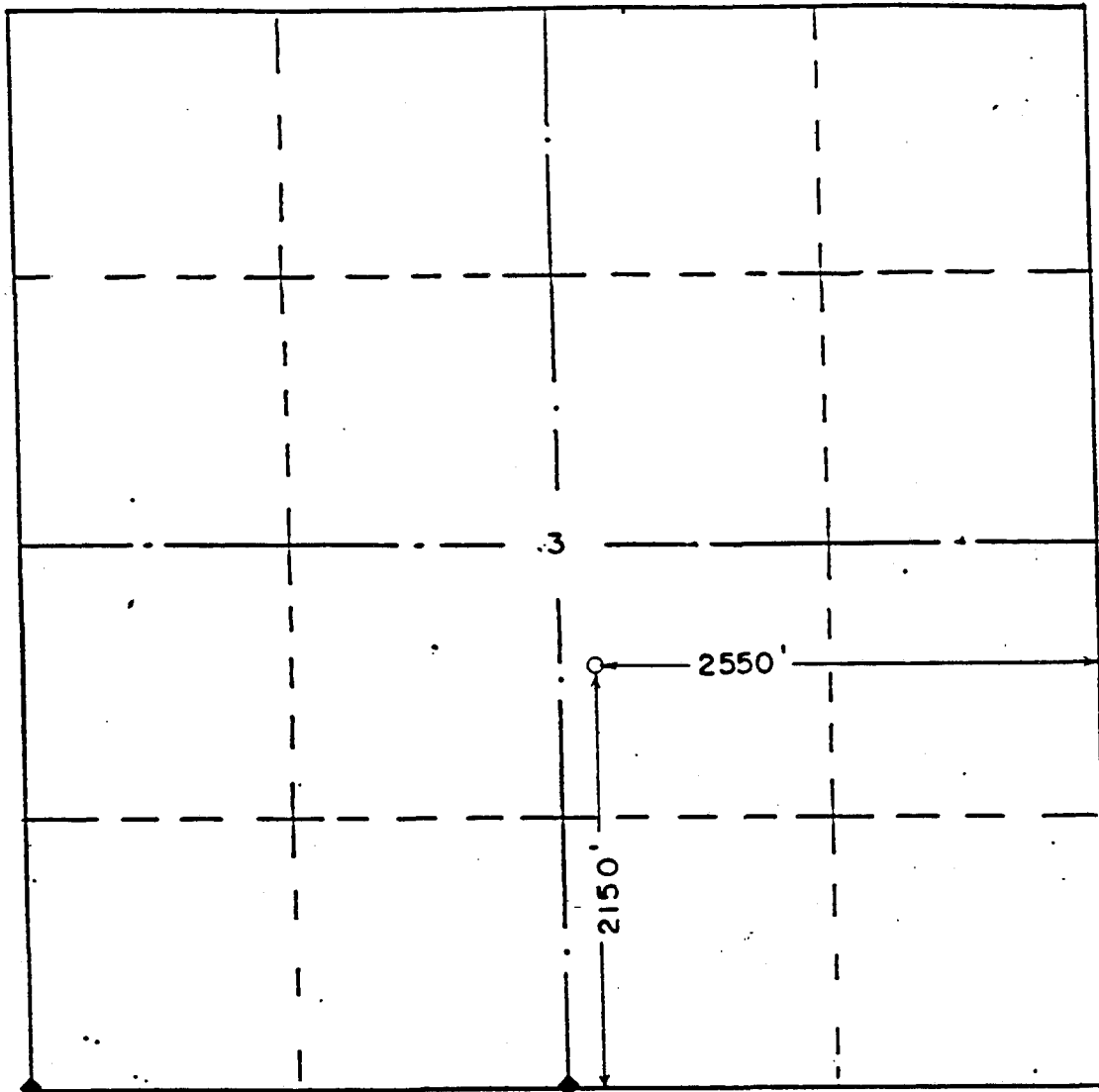
CONFIDENTIAL - TIGHT HOLE ATTACHED

\*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

# WELL LOCATION AND ACREAGE DEDICATION PLAT

PLAT #1

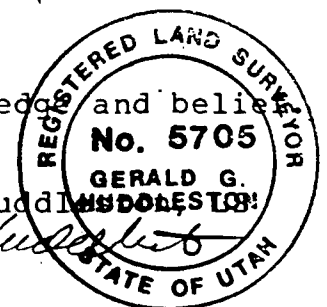


WELL LOCATION DESCRIPTION:  
 R. T. DUNCAN, Cave Canyon, 3 - 5  
 2150'FSL & 2550'FEL  
 Section 3, T.38 S., R.24 E., SLM  
 San Juan, UT.  
 5218' ground elevation

The above plat is true and correct to my knowledge and belief

29 May 1990

Gerald G. Huddleston



Duncan Energy Company  
Cave Canyon Federal No. 3-5  
NWSE Sec. 3, T.38S., R.24E.  
San Juan County, Utah  
Lease U-47876

#### CONDITIONS OF APPROVAL

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Be advised that Duncan Energy Company is considered to be the operator of the above well and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands.

Bond coverage for this well is provided by CO 0959 (Principal -Duncan Energy Company) via surety consent as provided for in 43 CFR 3104.2.

This office will hold the aforementioned operator and bond liable until the provisions of 43 CFR 3106.7-2 continuing responsibility are met.

This permit will be valid for a period of one year from the date of approval. After permit termination, a new application must be filed for approval.

All lease operations will be conducted in full compliance with applicable regulations (43 CFR 3100), Onshore Oil and Gas Orders, lease terms, notices to lessees, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions and the approved plan will be made available to field representatives to insure compliance.

A. DRILLING PROGRAM

1. Daily drilling and completion progress reports shall be submitted to the District Office on a weekly basis.



B. SURFACE USE PLAN

The bentonite will be worked into the soil of the reserve pit.

### C. REQUIRED APPROVALS, REPORTS AND NOTIFICATIONS

Required verbal notifications are summarized in Table 1, attached.

Building Location- Contact the Resource Area, Natural Resource Protection Specialist at least 48 hours prior to commencing construction of location.

Spud- The spud date will be reported to the Resource Area Office 24 hours prior to spudding. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the District Office within 24 hours after spudding, regardless of whether spud was made with a dry hole digger or big rig.

Daily Drilling Reports- Daily drilling reports shall detail the progress and status of the well and shall be submitted to the District Office on a weekly basis.

Monthly Reports of Operations- In accordance with Onshore Oil and Gas Order No. 1, this well shall be reported on Minerals Management Service (MMS) Form 3160, "Monthly Report of Operations," starting the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with MMS.

Sundry Notices- There will be no deviation from the proposed drilling and/or workover program without prior approval from the Assistant District Manager. "Sundry Notices and Reports on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.3-2. Safe drilling and operating practices must be observed.

Drilling Suspensions- Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Authorized Officer. All conditions of this approval shall be applicable during any operations conducted with a replacement rig.

Undesirable Events- Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be immediately reported to the Resource Area in accordance with requirements of NTL-3A.

Cultural Resources- If cultural resources are discovered during construction, work that might disturb the resources is to stop, and the Area Manager is to be notified.

First Production- Should the well be successfully completed for production, the Assistant District Manager, Minerals Division will be notified when the well is placed in producing status. Such notification may be made by phone, but must be followed by a sundry notice or letter not later than five (5) business days following the date on which the well is placed on production.

A first production conference will be scheduled as soon as production testing begins and hydrocarbons reach the surface. This conference should be coordinated through the Resource Area Office.

Well Completion Report- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted to the District Office not later than thirty (30) days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings and /or samples) will be submitted when requested by the Assistant District Manager.

Venting/Flaring of Gas- NTL-4A allows venting/flaring of gas during the initial well evaluation period not to exceed 30 days or 50 MMcf. Venting/flaring beyond the initial test period threshold must be approved by the District Office.

Produced Water- Produced waste water may be confined to an unlined pit for a period not to exceed 90 days after initial production. During the 90 day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted to the Assistant District Manager for approval pursuant to NTL-2B.

Off-Lease Measurement, Storage, Commingling- Prior approval must be obtained from the Assistant District Manager for off-lease measurement, off-lease storage or commingling (either down-hole or at the surface).

Plugging and Abandonment- If the well is completed as a dry hole, plugging instructions must be obtained from the BLM, Moab District Office prior to initiating plugging operations. Table 1 of this document provides the after-hours phone numbers of personnel who are authorized to give plugging instructions.

A "Subsequent Report of Abandonment" (Form 3160-5) will be filed with the Assistant District Manager, Minerals Division within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the Area Manager or his representative, or the appropriate surface managing agency.

### NOTIFICATIONS

Notify Jeff Brown, Robert Larsen or Bob Turri of the San Juan Resource Area, at (801) 587-2141 for the following:

2 days prior to commencement of dirt work, construction or reclamation;

1 day prior to spudding;

50 feet prior to reaching surface casing setting depth;

3 hours prior to testing BOPE;

If the person at the above number cannot be reached, notify the Moab District Office at (801) 259-6111. If unsuccessful, notify one of the people listed below.

Well abandonment operations require 24 hour advance notice and prior approval. In the case of newly drilled dry holes, verbal approval can be obtained by calling the Moab District Office, Branch of Fluid Minerals at (801) 259-6111. If approval is needed after work hours, you may contact the following:

Eric Jones, Petroleum Engineer

Office: (801) 259-6111

Home: (801) 259-2214

If unable to reach the above individuals, please call the following:

Lynn Jackson,

Chief, Branch of Fluid Minerals

Office: (801) 259-6111

Home: (801) 259-7990

TEMPORARY

RECEIVED

FILING FOR WATER IN THE  
STATE OF UTAHRec. by uklFee Rec. 75Receipt # 93-74

NOV 02 1992

OCT 13 1992

DIVISION OF

OCT 22 1992

OIL GAS &amp; MINING

WATER RIGHTS

SALT LAKE

Microfilmed

Roll #

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements to Title 73, Chapter 3 of the Utah Code Annotated (1953, as amended).

\*WATER RIGHT NO. 09 - 1808\*APPLICATION NO. A T665481. \*PRIORITY OF RIGHT: October 13, 1992 \*FILING DATE: October 13, 1992

## 2. OWNER INFORMATION

Name(s): Duncan Energy Company\*Interest: 100 %Address: 1777 S. Harrison Street, PH-1City: DenverState: COZip Code: 80210Is the land owned by the applicant? Yes XX No XX (If "No", please explain in EXPLANATORY section.)3. QUANTITY OF WATER: 5 cfs and/or 5 ac-ft.4. SOURCE: Cave Canyon Wtr. Source Well #1 \*DRAINAGE:

which is tributary to

which is tributary to

POINT(S) OF DIVERSION:

COUNTY: San Juan

North 1870 feet and East 1870 feet from the Southwest corner of Section 3,  
T38S - R24E, SLB&M

Description of Diverting Works: 7" casing, 3120' deep\*COMMON DESCRIPTION: 14 miles SE of BlandingBlanding Quad

## 5. POINT(S) OF REDIVERSION

The water will be rediverted from N/A at a point:

Description of Diverting Works:

## 6. POINT(S) OF RETURN

The amount of water consumed will be 5 cfs or 5 ac-ft.The amount of water returned will be -0- cfs or 5 ac-ft.

The water will be returned to the natural stream/source at a point(s):

## 7. STORAGE

Reservoir Name: N/A Storage Period: from toCapacity: ac-ft. Inundated Area: acres.Height of dam: feet

Legal description of inundated area by 40 acre tract(s):

\* These items are to be completed by the Division of Water Rights

TEMPORARY

Appropriate

8. List any other water rights which will supplement this application \_\_\_\_\_

9. NATURE AND PERIOD OF USE

Irrigation:	From _____	to _____
Stockwatering:	From _____	to _____
Domestic:	From _____	to _____
Municipal:	From _____	to _____
Mining:	From _____	to _____
Power:	From _____	to _____
Other: Oil Well Drilling	From Oct. 25, 1992	to December 15, 1992

10. PURPOSE AND EXTENT OF USE

Irrigation: \_\_\_\_\_ acres. Sole supply of \_\_\_\_\_ acres.  
Stockwatering (number and kind): \_\_\_\_\_  
Domestic: \_\_\_\_\_ Families and/or \_\_\_\_\_ Persons.  
Municipal (name): \_\_\_\_\_  
Mining: \_\_\_\_\_ Mining District in the \_\_\_\_\_ Mine.  
Ores mined: \_\_\_\_\_  
Power: Plant name: \_\_\_\_\_ Type: \_\_\_\_\_ Capacity: \_\_\_\_\_  
Other (describe): Duncan Energy Company plans to drill two oil wells in the Cave Canyon  
Lease Waterflood Project

11. PLACE OF USE

Legal description of place of use by 40 acre tract(s): \_\_\_\_\_  
Cave Canyon #3-5 NW SE (2510' FSL and 2550' FEL) Sec. 3, T38S - R24E - SLB&M  
Cave Canyon #4-5 NW NE (50' FNL and 1800' FEL) Sec. 4, T38S - R24E - SLB&M

12. EXPLANATORY

The following is set forth to define more clearly the full purpose of this application. (Use additional pages of the same size if necessary): Duncan Energy Company proposes to drill two development oil wells as part of the Cave Canyon Lease Waterflood project. Water use to drill each well will be approximately 10,000 BW. Water will be trucked or pumped to each drillsite. The pump truck will have a capacity of 80-100 Bbls. and will be enclosed. The surface at each drillsite is managed by the Bureau of Land Management, the minerals are owned by the Federal Government and the extraction rights to the Federal leases are owned by Duncan Energy Company

\*\*\*\*\*

The applicant(s) hereby acknowledges that he/she/they are a citizen(s) of the United States of America or intends to become such a citizen(s). The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purposes herein described. The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

\_\_\_\_\_  
Signature of Applicant(s)\*

\*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its authorized agent, or in the name of the partnership by one of the partners.

Lisa L. Smith - Permitco Inc.

Authorized Agent (please print)

\_\_\_\_\_  
Authorized Agent (signature)

TEMPORARY

STATE ENGINEER'S ENDORSEMENT

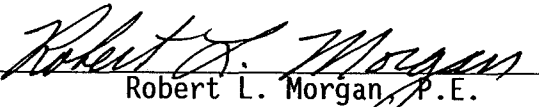
WATER RIGHT NUMBER: 09 - 1808

APPLICATION NO. T66548

1. October 13, 1992      Application received by MP.
  2. October 19, 1992      Application designated for APPROVAL by MP and KLJ.
  3. Comments:
- 
- 

Conditions:

This application is hereby APPROVED, dated October 30, 1992, subject to prior rights and this application will expire on October 30, 1993.

  
Robert L. Morgan, P.E.  
State Engineer





Norman H. Bangarter

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

355 West North Temple

3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

November 5, 1992

Duncan Energy Company  
1777 S. Harrison St., PH-1  
Denver, Colorado 80210

Gentlemen:

Re: Cave Canyon Federal #3-5 Well, 2150 feet from the south line, 2550 feet from the east line, NW 1/4 SE 1/4, Section 3, Township 38 South, Range 24 East, San Juan County, Utah

Pursuant to Utah Code Annotated Section 40-6-7 and 40-6-8 (1953 As amended); the order issued by the Board of Oil, Gas and Mining in Cause No. 217-1 dated June 23, 1989, for the Cave Canyon Field Secondary Recovery Unit; and Utah Administrative R. 649-3-4, Permitting of Wells to be Drilled, Deepened or Plugged-back, approval to drill the referenced well is hereby granted.

In addition, the following specific actions are necessary to fully comply with this approval:

1. Compliance with the requirements of Utah Admin. R. 649-1 et seq., Oil and Gas Conservation General Rules.
2. Notification within 24 hours after drilling operations commence.
3. Submittal of Entity Action Form, Form 6, within five working days following commencement of drilling operations and whenever a change in operations or interests necessitates an entity status change.
4. Submittal of the Report of Water Encountered During Drilling, Form 7.
5. Prompt notification prior to commencing operations, if necessary, to plug and abandon the well. Notify Frank R. Matthews, Petroleum Engineer, (Office) (801)538-5340, (Home) (801)476-8613, or R.J. Firth, Associate Director, (Home) (801)571-6068.

Page 2  
Duncan Energy Company  
Cave Canyon Federal #3-5 Well  
November 5, 1992

6. Compliance with the requirements of Utah Admin. R. 649-3-20, Gas Flaring or Venting, if the well is completed for production.

Trash and sanitary waste should be properly contained and transported to approved disposal locations, not retained in or disposed of in pits on location or downhole. Prior to the commencement of drilling operations, the operator should consult the local/county sanitarian and/or the Department of Environmental Quality, Division of Drinking Water/Sanitation, regarding appropriate disposal of sanitary waste.

This approval shall expire one year after date of issuance unless substantial and continuous operation is underway or a request for an extension is made prior to the approval expiration date. The API number assigned to this well is 43-037-31696.

Sincerely,



R.J. Firth  
Associate Director, Oil and Gas

ldc  
Enclosures  
cc: Bureau of Land Management  
J.L. Thompson  
WO11

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: DUNCAN ENERGY 43-037-31696

WELL NAME: CAVE CANYON FEDERAL 3-5

Section 3 Township 38S Range 24E County SAN JUAN

Drilling Contractor ARAPHOE

Rig # 4

SPUDDED: Date 11/6/92

Time

How ROTARY

**CONFIDENTIAL**

Drilling will commence

Reported by GLENN GOODWIN-DOGM

Telephone #

Date 12/2/92 SIGNED JLT

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

**RECEIVED**

DEC 14 1992

DIVISION OF  
OIL GAS & MINING

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Duncan Energy Company

3. Address and Telephone No.

1777 S. Harrison St. P-1 Denver, CO 303-759-3303

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

2150' FSL & 2550' FEL NWSE T38S-R24E  
Sec 3

5. Lease Designation and Serial No.

U-47876

6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA, Agreement Designation

Cave Canyon Lease Waterf

8. Well Name and No.

Cave Canyon 3-5

9. API Well No.

43-037-31696

10. Field and Pool, or Exploratory Area

Cave Canyon Field

11. County or Parish, State

San Juan, UT

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Other	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Duncan Energy Company spud subject well 12-8-92 with Arapahoe Drlg rig #4.

14. I hereby certify that the foregoing is true and correct

Signed

*Marie O'Keefe*

Title Sr. Engineering Technician

Date 12-10-92

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Title

Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such purposes.

SUBMIT IN TRIPLICATE

RECEIVED

JAN 11 1993

DIVISION OF  
OIL GAS & MINING

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other Dry

2. Name of Operator

Duncan Energy Company

3. Address and Telephone No.

1777 S. Harrison St. P-1 303-759-3303

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

2150' FSL & 2550' FEL 3-T38<sup>S</sup>-R24E NWSE

5. Lease Designation and Serial No.

U-47876

6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA, Agreement Designation

Cave Canyon Lease Wtrfloc

8. Well Name and No.

Cave Canyon 3-5

9. API Well No.

43-037-31696

10. Field and Pool, or Exploratory Area

Cave Canyon Field

11. County or Parish, State

San Juan, UT

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> Notice of Intent	<input checked="" type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Other	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Duncan Energy Company plugged the subject well 12-23-92. Approval was received from Eric Jones of the Moab, UT Bureau of Land Management, on 12-23-92.

Plugs:

91 Sx 5944-5650  
93 Sx 4700-4500  
45 Sx 2025-1925  
17 Sx 50-surface

Log Tops:

Ismay 5631  
Mass. Anhydrite 5681  
Hovenweep Shale 5787  
Lower Ismay 5795  
Gothic 5857  
Desert Crk 5867

Location will be restored per BLM requirements. A sundry notice will be sent once the work is complete.

14. I hereby certify that the foregoing is true and correct

Signed Maria O'Keefe

Title Sr. Engineering Technician

Date 1-5-93

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Title

Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved. JUN 7 - 1991  
Budget Bureau No. 1004-0137  
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other \_\_\_\_\_  
b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other P&A

2. NAME OF OPERATOR

Duncan Energy Company

3. ADDRESS OF OPERATOR

1777 S. Harrison St. P-1 Denver, CO 80210

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*

At surface 2150 FSL & 2550 FEL NWSE 3-T38N-R24E

At top prod. interval reported below Same

At total depth Same

14. PERMIT NO.

43-037-31696

DATE ISSUED

11-5-92

15. DATE SPUDDED

12-8-92

16. DATE T.D. REACHED

12-23-92

17. DATE COMPL. (Ready to prod.)

N/A

18. ELEVATIONS (DF, RKB, RT, OR, ETC.)\*

5220 GL, 5233 KB

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD

5944'

21. PLUG, BACK T.D., MD & TVD

N/A

22. IF MULTIPLE COMPL., HOW MANY\*

23. INTERVALS DRILLED BY

ROTARY TOOLS

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\*

N/A

25. WAS DIRECTIONAL SURVEY MADE

NO

26. TYPE ELECTRIC AND OTHER LOGS RUN

Neutron Density, DIL, SFL

CYBERLOOK

BOREHOLE COMP SPARK 1-12-93

27. WAS WELL CORED

NO

28.

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT FULLED
13 3/8	61#	116'	17 1/2"	450 sx Lite w/add.	None
				150 standard w/add.	
8 5/8"	24#	1975'	12 1/4"	150 sx Prem B w/add	None

29.

LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A		

31. PERFORATION RECORD (Interval, size and number)

N/A

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH, INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.\*

PRODUCTION

DATE FIRST PRODUCTION

N/A

PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)

WELL STATUS (Producing or shut-in)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

*Marie O'Leary*

TITLE Sr. Engineering Technician

DATE 1-5-93

\*(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS			
NAME	TOP		TRUE VERT. DEPTH
	MEAS. DEPTH		
Ismay Mass Anhyd. (Hovenweep Sh Lower Ismay Gothic Desert Crk	5631 5681 5787 5795 5857 5867		